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Synoptic oscillations in the parameters of the midlatitude sporadic E layer

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Abstract

Time variations in the oscillations of the maximum frequency of the midlatitude Es layer in the range of synoptic periods from 2 to 32 days have been studied using a wavelet analysis. A general character of the seasonal distribution of the intensities of the synoptic oscillations in the relative electron concentration of the Es layer has been established based on the integral spectra for the period of 20-40 years. A considerable increase in the synoptic oscillation amplitudes in the summer period and the appearance of winter oscillations with comparable magnitudes in some years have been revealed. The periods of dominating oscillations with the maximum amplitude in the obtained integral spectra of the Es layer have been determined for all seasons.